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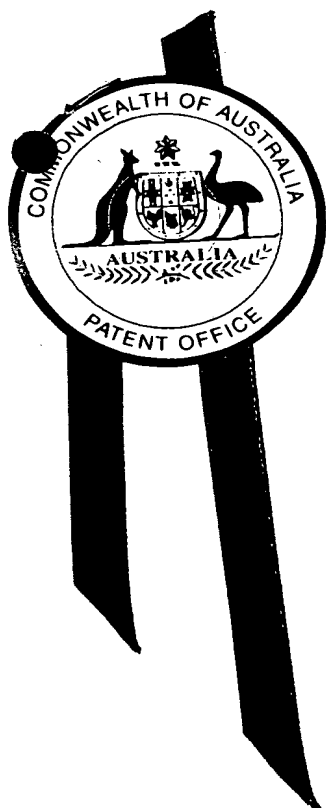
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I, KIM MARSHALL, MANAGER EXAMINATION SUPPORT AND SALES,  
hereby certify that the annexed is a true copy of the Provisional specification in  
connection with Application No. PP 1638 for a patent by A PTY LTD filed on  
5 February 1998.



WITNESS my hand this Thirty-First  
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# PROVISIONAL SPECIFICATION

Invention Title: Improved E-mail addressing system

The invention is described in the following statement:



## IMPROVED E-MAIL ADDRESSING SYSTEM

### Field of the Invention.

- 5 The present invention relates to systems for addressing and conveying electronic mail messages and refers particularly, though not exclusively, a system which has an easier and more logical determination of e-mail addresses.

### Background to the Invention

- 10 In recent years electronic communication has become commonplace. E-mail, a contraction of the words "electronic mail", refers to systems which allow messages to be sent between sites connected by data links. The most popular e-mail system is based on the internet, a worldwide network of interconnected computer networks. Any user connected to the internet can send e-mail to any other user. Most internet users do not connect directly to the internet; they use e-mail client software which connects via telephone lines and modem to  
15 a gateway into the internet. The e-mail client sends the message via the internet to a mail server. A mail server is a computer connected to the internet and equipped to receive, store and forward or deliver e-mail messages. If person A wishes to send an e-mail to person B, person A enters the message into his computer, which then sends the message to a mail  
20 server via the internet. Person B then instructs his computer to check whether the mail server has any messages for him, and when such a message is found, the mail server sends the data to his computer, where person B can access it.

- The same principles apply to e-mail systems which do not connect to the internet. For  
25 example, many corporations use e-mail within their enterprise, in which case it is transmitted via their intranet.

- E-mail messages are typically structured according to a protocol known as SMTP (Simple Mail Transfer Protocol) which includes a specification of an addressing format that enables  
30 e-mail messages to be routed to the correct destination. The address forms part of each e-mail's header information. The usual address structure is:  
accountname@hostname;



where 'accountname' is the name of the user to whom the e-mail is destined to be delivered, and 'hostname' is the name of the host computer where the user has an account. Hostname generally has a hierarchical series of domain names, separated by periods. For example 'inform.com.au' is the name of the host computer named "inform" in the "com" (commercial) domain within the "au" (Australian) domain.

The account name is typically an arbitrary alpha-numeric string chosen by the user. For example, 'theboss@inform.com.au' could be the e-mail address for a person actually named John Smith.

10

As evidenced by the foregoing example, there is not necessarily any obvious correlation between the e-mail address and the name of the actual account holder, as no standards have been established to regularise this aspect of the SMTP protocol. Consequentially, a person wishing to send an e-mail to Mr John Smith of XYZ Pty Ltd, but who does not know his e-mail address might guess that the address is John-Smith@XYZ.com.au, or any number of similar permutations.

15

In an effort to provide a means of discovering correct e-mail addresses, numerous directory databases have been established, whereby a person's or corporation's e-mail address can be searched for based on keys such as name, address, telephone number, geographical location, and so forth. Such directories have only partly solved the problem of obtaining e-mail addresses as they are not comprehensive. They are also inconvenient to use because the person sending the e-mail must access a directory and search for the desired e-mail address as an extra step in the process of sending an e-mail.

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It is therefore an object of the present invention to provide an improved system for addressing and conveying e-mail messages which addresses some of the limitations of the prior-art addressing and conveying schemes, and allows the sender of an e-mail to use certain well-known descriptors of the intended addressee as an alternative to the addressee's actual account and domain names.

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### Summary of the Invention

According to a first aspect of the present invention, there is provided a method of conveying an e-mail message including the steps of: preparing the e-mail message, including an address field in which an account name portion of the address is a descriptor of the intended recipient of the message and which may be different from the account name of the intended recipient, locating in a database of descriptors and e-mail addresses the e-mail address associated with said descriptor, and transmitting the message to the e-mail address yielded by the database.

- 10 The invention also provides a method of conveying an e-mail message including the steps of receiving the e-mail message from its sender, the e-mail message including an address field in which an account name portion of the address is a descriptor of the intended recipient of the message and which may be different from the account name of the intended recipient, locating in a database of descriptors and e-mail addresses the e-mail address  
15 associated with said descriptor, and transmitting the message to the e-mail address yielded by the database.

Preferably, the descriptor is a telephone number associated with the intended recipient.

- 20 Alternatively, the descriptor is a business name associated with said intended recipient. Further alternatively, the descriptor is a personal name associated with said intended recipient.

- Furthermore, the descriptor may be a part of a street address associated with the intended  
25 recipient.

- The descriptor may also be a combination of one or more identifying elements associated with the intended recipient. For example, the descriptor may comprise a concatenation of name and city, such as 'johnsmithsydney' or, for greater clarity, 'johnsmith.sydney'. This  
30 extension of the inventive concept can be useful for differentiating between several people with the same name. The descriptor may also include a concatenation of name and telephone number, such as johnsmith.61266525689. This, again, is helpful in



differentiating between multiple people with the same name, or in cases where there are a number of individual person's e-mail address associated with the one telephone number. It is envisaged that the invention would be arranged so that a great variety of combinations of descriptors can be used in a flexible arrangement. A consequence of this is that the more  
5 information included in the descriptor, the less likely for there to be ambiguity or uncertainty.

The present invent may provide a method of generating and conveying a return e-mail notification to the sender of the e-mail message, which reports the status of the database  
10 search and whether or not the e-mail has been received. Preferably it will also report when the e-mail message has been read. This may also include notification to the recipient of the e-mail that a message has been received. The notification may include notification by telephone, facsimile, pager or satellite, and may include the on-forwarding of the e-mail message. The recipient may be able to select or specify if they are to be notified, and/or if  
15 the message is to be on-forwarded. Status messages may include notification of failure to match the descriptor with an e-mail address, reporting of the e-mail address found, and other status information which may be of interest to the person creating the e-mail message.

20 The invention also includes means for carrying out the method of conveying or receiving and conveying, e-mail messages referred to above.

Another embodiment of the invention is that especially formatted e-mail messages are interpreted as database queries and not as e-mail messages to be readdressed and  
25 forwarded. According to one aspect, for example, a person wishing to ascertain the e-mail address of John Smith can send an e-mail addressed to  
johnsmith @invention.com  
with the keyword "find" (for example) as the text of the message, and an e-mail will be returned to the inquirer reporting the results of the search of the database.

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In another aspect, the present invention includes a computer equipped with e-mail client software adapted to execute the steps of recognising that an e-mail address of a message being sent does not include a host name, for example by the absence of the @ symbol, and



appending a predetermined hostname to the address before sending the e-mail. According to this aspect, use of the e-mail by the sender is beneficially simplified as the sender of the e-mail needs enter only the descriptor information into the e-mail client's address field, after which the e-mail sender adds the host name of the server adapted to perform the steps of the present invention. For example, the e-mail sender enters an address of johnsmith in the address field of the e-mail client and selects "send". The client then appends @invention.com to form the address johnsmith@invention.com, and sends it to that host. The host invention.com then looks up the database, finds that johnsmith is, for example, techsup@megabig.com.nl and forwards the e-mail to that address.

The invention also provides a method of determining an e-mail address including providing a database where e-mail addresses are linked with descriptors relevant for a person at each e-mail address so that a user can provide one or more of the descriptors enabling a search to be conducted of the database to determine the relevant e-mail address, the descriptors including at least one of given name, surname, address, name of business, and/or telephone number.

The database may be at the transmitter, or separate. If separate, the transmitter would recognise that the information given in the account name portion of the address was insufficient or not in the correct form for delivery, and therefore pass the necessary message to the operator of the database who would locate the correct or complete address, and forward the message. Alternatively, the operator of the database could pass the correct or complete address back to the transmitter to enable them to send the message.

The invention also includes a database to enable the method to be performed, the database having fields for e-mail addresses, and separate fields for each of given name, surname, telephone number, name of business and/or address; at least one of the separate fields being completed for each e-mail address.

The invention also provides an address system to enable users of computer-based telecommunication systems to independently locate an address of a user, the address system including at least one portion which is the numeric characters of a number of a telecommunications device of the user, the at least one portion being that portion which



identifies the user. The telephone number may include the area code within the user's country, or may include the country code within the user's country; or may include the personal access number within the user's country.

Preferably, the computer-based telecommunication system is the internet, or it may be the world wide web.

The device may be a telephone, facsimile, pager, mobile telephone or satellite connected technology.

At least one portion of the descriptor may be alpha numeric; with the alpha optionally including at least a part of a name of the user.

10 The alpha may precede the numeric, or the numeric may precede the alpha.

The present invention may also allow an enquiry facility which will allow the proposed sender of the e-mail to ascertain the details of the recipient's universal messaging contact details. These contact details may include the prospective recipient's street address, telephone number, facsimile number, mobile telephone number, e-mail address, pager, or  
15 satellite connected details or any other e-mail address information he or she chooses to make.

### **Description of the drawing**

A preferred embodiment of the present invention will now be described by way of non-limitative example only and with reference to the accompanying drawing which is a block  
20 diagram showing the functional units of the invention.

### **Description of Preferred Embodiment**

Referring to the drawing, in this embodiment of the invention, e-mail client 1 is a standard  
25 e-mail client complying with SMTP. The author of the e-mail message in this example does not know the address of the person he wishes to send it to, but does know the person's telephone number 6193312345 which, including the country code, 61 in this example, is unique to that person. The author therefore addresses the message to  
6193312345@phoneserv.net, phoneserv.net being the host name of the special server of  
30 this exemplary embodiment of the present invention.



E-mail client 1 then sends the SMTP message addressed to 6193312345@phoneserv.net to internet 2 via a suitable router. The message is subsequently routed to server 3 which is running on the host called phoneserv.net. Server 3 is adapted to access database 4 which is a database mapping e-mail addresses to descriptors, including, in this example, personal name, business name, street address, and telephone number. In this example, a search of the entries for telephone number 6193312345 returns the e-mail address xyz@domain.com. Server 3 then substitutes the address xyz@domain.com for the received address of 6193312345@phoneserv.net and sends the message with this address onwards via the Internet to the desired destination.

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To further enhance the usefulness of this invention, the software is arranged so that multiple keywords and/or fields can be combined within the descriptor of the address. For example, a database lookup of the descriptor johnsmith may return many matches. To narrow the search, part or whole of his address can be added to the descriptor. For example, if the sender knows that John Smith lives in Centennial Street, Bankstown, he could use the descriptor johnsmith.bankstown or preferably johnsmith.centennial.bankstown. The latter would probably return a unique database match. The database engine of this embodiment of the invention applies well-known software techniques to allow free-form matching of multiple keys within descriptors.

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It is envisaged that where possible the telephone number of the addressee would be used as the descriptor. By including the country code and/or area code in the telephone number, such a descriptor is likely to uniquely specify the desired addressee. Furthermore, telephone numbers can be readily ascertained, for example from directory assistance services or telephone directories. Where several people may be associated with one telephone number, for example several employees of a business or several residents at one home, further qualification can be added to the descriptor. For example, the person's given name or names can be included to form a descriptor such as john.61247515280. The database engine can be arranged so that if the search of the database gives returns a unique e-mail address, any further qualification of the descriptor is ignored. In the example of john.61247515280, if 61247515280 returns a unique match, the prepended "john" is ignored.

30



In the case where no match is found or multiple matches result in ambiguity, server 3 returns a message to the sender explaining the nature of the problem. The sender might then try again using a different or expanded descriptor by for example:

5 johnsmith612 47515280..

In an alternative embodiment of the invention, e-mail client 1 is further adapted to automatically include a predetermined hostname if none is included in the address entered by the author of the e-mail being sent. In other embodiments, server 3 is adapted to accept  
10 e-mail addresses which do not include a hostname. These enhancements allow the user to enter only a descriptor, for example just a telephone number, the database then providing the server with the required, relevant information obtained from the database, and the server then converting this to the relevant e-mail address.

15 It will be understood that the foregoing description of the present invention is exemplary only. Many variations can be made without departing from the scope of the present invention. For example, whereas the database search function in the embodiment of the invention described above is performed at the site of server 3, it will be understood that this function could be provided by a database server located elsewhere. Furthermore, the  
20 database may well, in practice, not be located at one site but be distributed over multiple sites. For example, if server 3 receives an e-mail addressed with a descriptor including the word "japan" a database query could be sent to a suitable database server in Japan. Similarly, if server 3 were to receive an e-mail addressed to a telephone number starting with, for example, "49", it could either send a query to the telephone number database in  
25 Germany, or it could forward the whole message to a suitable server in Germany for further handling.

The invention may also be applicable to universal messaging systems whereby messages sent by one medium may be delivered by another. For example, by using voice-recognition  
30 technology, or keypad operation, a telephone message may be delivered by facsimile, internet or intranet, or by satellite; or an e-mail message sent via the internet may be delivered to a mobile telephone, satellite, pager, facsimile, or the like.



It is also envisaged that part or all of the functionality of the invention could be provided by software running at the e-mail sender's site. For example, an e-mail client could be adapted to automatically send a search request to a remote database, substitute a returned e-mail address for a descriptor entered by the author of the e-mail, and then send the e-mail to that address. It is of course also envisaged that part or all of the invention can be implemented as software running at an internet service provider's site.

It will be understood that the invention disclosed and defined herein extends to all alternative combinations of two or more of the individual features mentioned or evident from the text or drawings. All of these different combinations constitute various alternative aspects of the invention.

It will also be understood that where the term "comprises" or its grammatical variants, is employed herein, it is equivalent to the term "includes" and is not to be taken as excluding the presence of other elements or features.

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by their registered Patent Attorneys  
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4 February 1998



